

CLAIMS

We claim:

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1. An apparatus for evaluating the integrity of a seal on a liquid-filled container, comprising:

5 a tank;

10 a clamp having a first member and a second member between which a container is engaged, the clamp being positioned with respect to the tank such that at least a portion of a container properly engaged in the clamp will extend into the tank; and

15 a ram and cylinder operatively connected to the clamp such that the clamp can be clampingly engaged about a container by relative movement between the ram and the cylinder, the first member is connected to one of either the ram or the cylinder such that the first member is displaced toward the second member by relative movement between the ram and the cylinder.

2. The apparatus of claim 1, wherein the ram and the cylinder are actuated by air pressure.

3. The apparatus of claim 1, including a seat adapted to support a portion of a container to establish a desired position of a container with respect to the clamp.

4. The apparatus of claim 3, wherein the desired portion of a container is such that at least a portion of a container supported by the seat will extend into the tank.

5. The apparatus of claim 4, including a cylinder positioned in the tank and the seat being defined by a terminal edge of the cylinder.

20 6. The apparatus of claim 4, including a plate having an aperture, the seat being defined by a marginal edge of the aperture.

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7. The apparatus of claim 6, wherein the marginal edge is tapered to define a frustaconical shape.

8. The apparatus of claim 6, wherein the seat is positioned above the tank.

9. The apparatus of claim 1, wherein the tank, the clamp, and the ram and cylinder are mounted on a mobile platform.

10. The apparatus of claim 9, wherein the platform has at least one utility connection, the platform having a plurality of wheels.

11. The apparatus of claim 4, including a means for making an opening in a wall of the container.

12. The apparatus of claim 11, wherein the means for making an opening being positioned such that the opening can be made while the container is in the seat.

13. The apparatus of claim 12, wherein the means for making an opening is vertically adjustable along a support and the means is rotatable in a plane substantially horizontal to the support.

14. The apparatus of claim 13, wherein the support is attached to a mobile platform and wherein the tank, the clamp, the seat, and the ram and cylinder are mounted on the platform.

15. The apparatus of claim 14, further comprising a conductivity meter mounted on the platform, a first electrode attached to the means for making an opening, and a second electrode positioned such that at least a portion of the second electrode extends into the tank.

16. The apparatus of claim 11, wherein the means for making an opening is an electric drill.

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17. The apparatus of claim 11, wherein the means for making an opening is a manual drill.
18. The apparatus of claim 11, wherein the means for making an opening is a punch
19. The apparatus of claim 11, wherein the means for making an opening is a heated lance.

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20. A method for evaluating the integrity of a seal on a liquid-filled container, comprising:

placing a liquid-filled container in a clamp such that at least a portion of the container extends into a tank;

activating a clamp to engage an outer surface of the container;

5 making an opening in a bottom surface of the container;

inserting a first electrode into the container opening;

placing a second electrode in the tank;

connecting the first electrode and the second electrode to a conductivity meter;

and,

measuring the conductivity between the first and second electrode.

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21. A method for evaluating the integrity of a seal on a liquid-filled container, comprising:

clamping a container with a closure such that at least the closure remains
submersed in a solution; and,

making an opening in a wall of the container while the container remains clamped
and the closure remains submersed in the solution.

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22. A method for evaluating the integrity of a seal on a liquid-filled container, comprising:

clamping a container with a closure such that at least the closure remains
submersed in a solution;

making an opening in a wall of the container while the container remains clamped
5 and the closure remains submersed in the solution;

inserting a first electrode into the opening in the container wall;

inserting a second electrode in the solution;

connecting the first and second electrodes to a conductivity meter; and,

measuring the electron flow between the first and second electrodes with the

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meter.